

Remarks

In an effort to simplify further consideration of this application and expedite allowance, the Applicants have cancelled all of the claims except for Claims 158-160. Such cancellation is, of course, made without prejudice and made without disclaimer of the subject matter therein.

Claims 158-160 have been amended. Claim 158 recites that the stripes are applied between the barrier ribs “by pressing the phosphor paste continuously at a selected pressure and discharging the phosphor paste...such that the phosphor paste continuously flows downwardly from all of the holes for each color of the phosphor paste.” Claim 159 has been similarly amended to recite coating a substrate with three phosphor pastes “by continuously applying a selected pressure to the respective phosphor pastes and discharging the respective phosphor pastes...such that the phosphor paste continuously flows downwardly from all of the holes for each color.” Claim 160 has been amended such that the apparatus comprises, among other things, a paste applicator for applying phosphor paste “by pressing the phosphor paste continuously at a selected pressure and discharging the phosphor paste...such that the phosphor paste continuously flows downwardly.”

Support for these amendments to Claims 158-160 may be found in both the Applicants’ priority application HEI 8-336713, filed December 17, 1996 and the Applicants’ original U.S. Specification as filed in the PTO. In that regard, the Applicants invite the Examiner’s attention to the Applicants’ priority document at such locations as Claim 2 on Page 1 of the English translation as well as the third full paragraph of Page 6 of the English translation. Similarly, the Applicants invite the Examiner’s attention to the first full paragraph of Page 5 of the Applicants’ U.S. Specification, as well as the third paragraph on Page 39 of that original application. One skilled in the art can readily see that the language in the amended claims is fully and completely supported by both the Applicants’ Japanese priority document and the original U.S.

Specification. Entry into the official file is respectfully requested.

Claim 123 stands rejected under 35 U.S.C. §112 second paragraph. The Applicants respectfully submit that the rejection is moot in view of cancellation of that claim.

Claims 141, 143, 147-151, 153 and 164 stand rejected under 35 U.S.C. §103 over Nanto. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of those claims.

Claims 142 stands rejected under 35 U.S.C. §103 over the combination of Ravi-Chandar with Nanto. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of that claim.

Claims 146 stands rejected under 35 U.S.C. §103 over the combination of Mettenbrink with Nanto. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of that claim.

Claims 153 stands rejected under 35 U.S.C. §103 over the combination of Koike with Nanto. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of that claim.

Claims 144-145 stand rejected under 35 U.S.C. §103 over the combination of Silverbrook with Nanto. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of those claims.

Claims 121-123, 125-127, 129-134, 137, 141, 143, 147-154, 161 and 164 stand rejected over the combination of Nanto with Aoki. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of those claims.

Claims 124 and 142 stand rejected under 35 U.S.C. §103 over the further combination of Ravi-Chandar with Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of those claims.

Claims 128 and 146 stand rejected under 35 U.S.C. §103 over the further combination of Mettenbrink with Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of those claims.

Claim 131 stands rejected under 35 U.S.C. §103 over the further combination of Osaka with Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of those claims.

Claims 134-137, 152-153, 156 and 162-163 stand rejected under 35 U.S.C. §103 over the further combination of Koike with Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of those claims.

Claims 140 and 155 stand rejected under 35 U.S.C. §103 over the further combination of Kohli with Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of those claims.

Claim 157 stands rejected under 35 U.S.C. §103 over the combination of Kohli with Koike, Nanto and Aoki. The Applicants respectfully submit that the rejection is moot in view of the cancellation of that claim.

Claims 144-145 stand rejected under 35 U.S.C. §103 over the combination of Silverbrook with Nanto and Aoki. The Applicants respectfully submit that the rejection is now moot in view of the cancellation of those claims.

Claims 158-160 stand rejected under 35 U.S.C. §103 over Iguchi. The Applicants note with appreciation the Examiner's detailed comments hypothetically applying Iguchi to those claims. The Applicants nonetheless respectfully submit that Iguchi fails to disclose methods or apparatus that renders obvious the subject matter of Claims 158-160. Details are set forth below.

The rejection states that Iguchi discloses a method of making a plasma display, a fluorescent substance comprising a phosphor powder and an organic binder injected between

barrier ribs via an ink-jet head nozzle and that the phosphor layer is then heated. The rejection also refers to Fig. 1 and a nozzle is “interpreted” to be the claimed outlet hole.

The Applicants first note that Claims 158-160 do not claim an outlet hole. Instead, those claims recite 640 to 2,000 outlet holes --- which the rejection frankly acknowledges. The Applicants respectfully submit that it is anything but obvious to attempt to employ 640 to 2,000 outlet holes in the face of the disclosure of a single nozzle. This is particularly true in view of the demonstration at the interview wherein the Applicants’ demonstrated the unexpected results that they have achieved over the prior art that uses multiple outlet holes, but was unable to produce a display that is free of the “striping” effect present in other displays. The Applicants therefore respectfully submit that on this basis alone, Iguchi is completely and applicable to Claims 158-160.

However, there are further serious problems associated with Iguchi. The Applicants agree that Iguchi discloses an ink-jet system. This is problematic in and of itself inasmuch as ink-jet systems coat surfaces with ink droplets intermittently ejected from the nozzle and onto the surface. This is well known in the art and admitted by Iguchi in Paragraph [0009] wherein Iguchi describes the ink jet method as “blowing off a very small ink particle from a controllable head nozzle.” What this means to one skilled in the art is that, as noted above, the Iguchi ink-jet system applies individual ink droplets to the surface from the nozzle that is shown in the drawings.

This is sharply different from what the Applicants do and what Claims 158-160 recite. In that regard, the Applicants re-invite the Examiner’s attention to all three of those claims wherein they specifically recite that the phosphor paste is continuously discharged from the outlet holes. This is essentially the opposite of the intermittent, individual droplet approach taken by Iguchi. Thus, the Applicants respectfully submit that Iguchi is inapplicable to Claims 158-160.

However, there is other proof of this ink-jet problem. The Applicants invite the Examiner's attention to the Aoki reference that has been applied to others of the claims (now cancelled). In particular, the Applicants invite the Examiner's attention to Col. 8 of Aoki beginning at Line 8 wherein Aoki continuously applies ink and then contrasts that continuous application of Aoki to "conventional ink-jet methods" that "apply ink in liquid drops, resulting in an uneven layer."

The Applicants respectfully submit that Aoki confirms the Applicants' interpretation of Iguchi and confirms the differences of the Applicants' claim language over Iguchi. In other words, those skilled in the art recognize that the continuous application of "ink" of Aoki (versus the claimed phosphor paste) is completely different from the intermittent ink-jet method that applies individual droplets of liquid. The Applicants therefore respectfully submit that this further demonstrates that Iguchi and the subject matter of Claims 158-160 are completely different and Iguchi actually leads those skilled in the art away from that claimed subject matter. Specifically, Iguchi teaches ink-jet methodology which applies individual liquid drops to a substrate, while the claimed subject matter proceeds in the opposite direction and continuously applies phosphor paste to the substrate. Again, the differences between these two are confirmed in the Aoki publication which means that these differences are known to those skilled in the art and accepted as such. Withdrawal of the rejection of Claims 158-160 over Iguchi is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC/as
(215)656-3381